DEPARTMENT OF COMMERCE

RADIO SERVICE BULLETIN

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ABBREVIATIONS

The necessary corrections to the List of Radio Stations of the United States and to the International List of Radiotelegraph Stations, appearing in this bulletin under the heading "Alterations and corrections," are published after the stations affected in the following order:

Name = Name of station.
Loc. = Geographical location. O = west longitude. N = north latitude. S = south latitude.
Call = Call letters assigned.
System = Radio system used and sparks per second.
Range = Normal range in nautical miles.
W. l. = Wave lengths assigned: Normal wave lengths in italics.
Service = Nature of service maintained.
PG = General public.
PR = Limited public.
RC = Radio compass station.
FS = Fog signal.
P = Private.
G = Government business exclusively.
Hours = Hours of operation:
N = Continuous service.
X = No regular hours.
E. T. Co. = Federal Telegraph Co.
I. R. T. Co. = Intercity Radio Telegraph Co.
I. W. T. C. = Independent Wireless Telegraph Co.
K. & C. = Kilbourne & Clark Manufacturing Co.
R. C. A. = Radio Corporation of America.
S. O. R. S. = Ship Owners' Radio Service.
U. R. Corp. = Universal Radio Corp.
W. S. A. Co. = Wireless Specialty Apparatus Co.
C. w. = Continuous wave.
I. c. w. = Interrupted continuous wave.
V. t. = Vacuum tube.
FX = Fixed station.
U. S. L. = After operating company denotes that the change applies only to the List of Radio Stations of the United States.
Kc. = Kilocycles.
Fy. = Frequency.
A. c. = Alternating current.

NEW STATIONS

Commercial land stations, alphabetically by names of stations

[Additions to the List of Radio Stations of the United States, edition of June 30, 1924, and to the International List of Radiotelegraph Stations published by the Berne bureau]

Station	Call signal	Wave lengths	Service	Hours	Station controlled by—
Uganik, Alaska [1]	KLP	600, 706	P	X	Kodiak Island Fishing & Packing Co.

[1] Range, 150; system, Lowenstein, 1000.

Commercial ship stations, alphabetically by names of vessels

[Additions to the List of Radio Stations of the United States, edition of June 30, 1924, and to the International List of Radiotelegraph Stations published by the Berne bureau]

Name of vessel	Call signal	Rates	Service	Hours	Owner of vessel	Station controlled by—
Avondale	KKAU	8	PG	X	U. S. Shipping Board	
City of Fort Worth.[2]	KONM	8	PG	X	Southern Steamship Co.	Owner of vessel.
Clairton [3]	KIKR	8	PG	N	U. S. Shipping Board	I. W. T. Co.
Cytheres [3]	KYQ	8	PG	X	Fred Weber	Owner of vessel.
Dego	KFWE	8	PG	X	Gulf Fisheries Co.	R. C. A.
Eastern Gale	KUDZ	8	PG	X	Booth Fisheries Co.	U. R. Corporation.
Gallavant [4]	KFWJ		P	X	Chester Kennison	Owner of vessel.
Goodtime [4]	WCP		PG	X	Cleveland & Buffalo Transit Co.	I. R. T. Co.
John Cudahy [4]	KFWG		P	X	Pacific Tug Boat Co.	Owner of vessel.
Missouri [7]	WPX		PG	N	Michigan Transit Co.	R. C. A.
Montrolite	WFA	8	PG	X	Standard Oil Co. of New Jersey	Do.
Narcissus [8]	KDIH	8	PG	X	U. S. Shipping Board	Owner of vessel.
Nirvana [9]	KFWK		P	X	William R. Seigle	Do.
Peary [10]	WAP		P	X	Donald B. MacMillan	Do.
S. B. Coolidge [11]	WHH		PG	X	Pioneer Steamship Co.	I. R. T. Co.
T. W. Robinson	WMX		PG	X	Bradley Transportation Co.	
William G. Mather.[12]	WBS		PG	X	Cleveland Cliffs Steamship Co.	

[1] Range, 200; system, Navy-R. C. A., 1000; w. l., 600, 706, 800.
[2] Range, 300; system, Navy-R. C. A., 1000; w. l., 450, 600, 706, 800, 875.
[3] Range, 100; system, composite v. t. telephone and telegraph; w. l., 600, 706, 800, 1,250.
[4] Range, 25; system, composite v. t. telephone and telegraph; w. l., 110, 600.
[5] Range, 150; system, Navy-Lowenstein, 1000; w. l., 715, 875; rates, Great Lakes service, 4 cents per word.
[6] Range, 200; system, Navy-Lowenstein, 1000; w. l., 600, 706, 800.
[7] Range, 150; system, R. C. A., 1000; w. l., 715, 875; rates, Great Lakes service, 4 cents per word.
[8] Range, 300; system, Federal arc and Navy spark, 1000; w. l., 450, 600, 706, 800, 875.
[9] Range, 25; system, composite v. t. telegraph; w. l., 115, 600.
[10] Range, 200; system, composite v. t. telephone and telegraph; w. l., 600, 706; also operates on variable amateur wave lengths.
[11] Range, 200; system, Navy-Simon, 1000; w. l., 715, 800, 875; rates, Great Lakes service, 4 cents per word.
[12] Rates, Great Lakes service, 4 cents per word.

Commercial land and ship stations, alphabetically by call signals

[b=ship station; c=land station]

Call signal	Name of station		Call signal	Name of station	
KDIH	Narcissus	b	KUDZ	Eastern Gale	b
KFWE	Dego	b	KYQ	Cytheres	b
KFWG	John Cudahy	b	WAP	Peary	b
KFWJ	Gallavant	b	WBX	William G. Mather	b
KFWK	Nirvana	b	WCP	Goodtime	b
KIKR	Clairton	b	WFA	Montrolite	b
KKAU	Avondale	b	WPX	Missouri	b
KLP	Uganik, Alaska	c	WHH	S. B. Coolidge	b
KONM	City of Fort Worth	b	WMX	T. W. Robinson	b

Broadcasting stations, alphabetically by names of States and cities

[Additions to the List of Radio Stations of the United States, edition of June 30, 1924]

State and city	Call signal	State and city	Call signal
Arkansas: Bentonville	KFVX	Indiana: Fort Wayne	WOWO
California:		Maine: Portland	WCSH
Eureka	KFVU	Michigan: Detroit	WGHP
San Diego	KFVW	Mississippi: Meridian	WIBP
San Francisco	KGTT	New Jersey: Elizabeth (portable)	WIBS
South San Francisco	KFWI	New Mexico: Albuquerque	KFVY
Florida:		New York:	
Miami	WGBU	New York	WRNY
St. Petersburg	WJBB	Richmond Hill (portable)	WGMU
Illinois:		North Carolina: Asheville	WABC
Chicago (portable)	WIBM	Texas:	
Do	WKBG	Brownsville	KWWG
Chicago	WLTS	Houston	WSAV
Do	WSBC	Orange	KFGX
Evanston	WEHS	West Virginia: Weirton	WIBR
Farina	WIBQ		
Joliet	WJBA		

Stations broadcasting market or weather reports, music, concerts, lectures, etc., alphabetically by call signals

Call signal	Location of station (address)	Station operated and controlled by—	Power (watts)	Wave length	Frequency (kilocycles)
KFGX	Orange, Tex	First Presbyterian Church	500	250	1,200
KFVU	Eureka, Calif., 551 G Street	Radio Shop (Pete Radelich)	5	202.7	1,480
KFVW	San Diego, Calif., 402 B Street	Airfan Radio Corp	500	246	1,220
KFVX	Bentonville, Ark	Radio Shop (R. H. Porter)	10	238	1,270
KFVY	Albuquerque, N. Mex., 413 West Central Avenue.	Radio Supply Co	10	250	1,200
KFWI	South San Francisco, Calif., 1085 Monadnock Building.	Radio Entertainments (Inc.)	500	220	1,360
KGTT	San Francisco, Calif	Glad Tidings Tabernacle	50	234	1,280
KWWG	Brownsville, Tex	City of Brownsville, Board of City Development.	500	278	1,080
WABC	Asheville, N. C., 19 Haywood Street.	Asheville Battery Co	10	254	1,180
WCSH	Portland, Me	Congress Square Hotel Co	500	256	1,170
WEHS	Evanston, Ill	Evanston Township High School	20	202.6	1,480
WGBU	Miami, Fla	Florida Cities Finance Co	500	384.4	780
WGHP	Detroit, Mich., 110 Rowena Street.	George H. Phelps	500	270	1,110
WGMU	Richmond Hill, N. Y. (portable)	A. H. Grebe & Co	100	235	1,270
WIBM	Chicago, Ill. (portable), 36 West Randolph Street.	Billy Maine	10	215.7	1,390
WIBP	Meridian, Miss	First Presbyterian Church	5	209.7	1,430
WIBQ	Farina, Ill	F. M. Schmidt	5	205.4	1,460
WIBR	Weirton, W. Va	Thurman A. Owings	50	248	1,220
WIBS	Elizabeth N. J. (portable)	New Jersey National Guard, Fifty-seventh Infantry Brigade.	20	202.6	1,480
WJBA	Joliet, Ill., 901 Whitley Avenue	D. H. Lentz, jr	50	208.8	1,450
WJBB	St. Petersburg, Fla., 1922 Central Avenue.	L. W. McClung	10	208.8	1,450
WKBG	Chicago, Ill. (portable), 36 South State Street.	C. L. Carrell	100	215.7	1,390
WLTS	Chicago, Ill	Lane Technical High School	100	253	1,189
WOWO	Fort Wayne, Ind., 213 West Main Street.	Main Auto Supply Co	500	227	1,320
WRNY	New York, N. Y., 53 Park Place	Experimenter Publishing Co	500	258	1,169
WSAV	Houston, Tex., 1406 Houston Avenue.	Clifford W. Vick Radio Construction Co.	100	248	1,210
WSBC	Chicago, Ill., 1219 South Wabash Avenue.	World Battery Co	200	208.7	1,430

Special land stations, alphabetically by names of stations

[Additions to the List of Radio Stations of the United States, edition of June 30, 1924]

Station	Call signal	Station controlled by—
Anoka, Minn.	9XQ	Washburn-Crosby Co.
Chicago, Ill.	9XN	Chicago Radio Laboratory, 332 South Michigan Avenue.
Dearborn, Mich. (Maiden Dearborn II—airplane)	8XAM	Stout Metal Airplane Co.
Dearborn, Mich.	8XAN	Do.
Los Angeles, Calif.	6YD	National Automotive & Electrical School, 6006 South Figueroa Street.
Oakland, Calif. (portable)	6XAX	General Electric Co., 5555 East Fourteenth Street.
Seattle, Wash.	7YB	Roosevelt High School.

Special land stations, grouped by districts

Call signal	District and station	Call signal	District and station
	Sixth district:	8XAM	Eighth district—Continued.
6XAX	Oakland, Calif. (portable).		Dearborn, Mich.
6YD	Los Angeles, Calif.	8XAN	Ninth district:
7YB	Seventh district: Seattle, Wash.		Chicago, Ill.
	Eighth district:	9XN	Anoka, Minn.
	Dearborn, Mich. (Maiden Dearborn II—airplane).	9XQ	

Government ship stations, alphabetically by names of stations

[Additions to the list of Radio Stations of the United States, edition of June 30, 1924, and to the International List of Radiotelegraph Stations published by the Berne bureau]

Station	Call signal	Wave length	Service	Hours	Station controlled by—
Corwin [1]	NEGB	130, 143	O	X	U. S. Coast Guard.
Dallas [1]	NEFG	130, 143	O	X	Do.
Dexter [1]	NEQG	130, 143	O	X	Do.
Eagle [1]	NIGZ	130, 143	O	X	Do.
Forward [1]	NIDG	130, 143	O	X	Do.
Gallatin [1]	NIQG	130, 143	O	X	Do.
General G. W. Getty [2]	WYAK	600	O	X	U. S. Army.
Mahoning [1]	NOCG	130, 143	O	X	U. S. Coast Guard.
Nansemond [1]	NOGQ	130, 143	O	X	Do.
Naugatuck [1]	NITG	130, 143	O	X	Do.
Patriot [1]	NOVG	130, 143	O	X	Do.
Perry [1]	NUCG	130, 143	O	X	Do.
Petrel [1]	NUVG	130, 143	O	X	Do.

[1] Range, 50; system, Western Electric v. t. telephone and telegraph.
[2] Range, 30; system, United States Army, 1,000.

Government airplane stations, alphabetically by names of stations

[Additions to the List of Radio Stations of the United States, edition of June 30, 1924, and to the International List of Radiotelegraph Stations published by the Berne bureau]

Station	Call signal	Wave length	Service	Hours	Station controlled by—
Arctic Plane No. 1 [1]	NADK	38. 5, 41, 300, 600	O	X	U. S. Navy.
Arctic Plane No. 2 [1]	NAFK	38. 5, 41, 300, 600	O	X	Do.
Arctic Plane No. 3 [1]	NAGK	38. 5, 41, 300, 600	O	X	Do.

[1] System, United States Navy spark, 1000 and composite, v. t. telegraph.

Government land and ship stations, alphabetically by call signals

[b=ship station; c=land station]

Call signal	Name of station		Call signal	Name of station	
NADK	Arctic Plane No. 1 (airplane)		NIQG	Gallatin	b
NAFK	Arctic Plane No. 2 (airplane)		NITG	Nangatuck	b
NAGK	Arctic Plane No. 3 (airplane)		NOVG	Patriot	b
NEFG	Dallas	b	NOCG	Mahoning	b
NEGB	Corwin	b	NOQG	Nansemond	b
NEQG	Dexter	b	NUCG	Perry	b
NIDG	Forward	b	NUVG	Petrel	b
NIGZ	Eagle	b	WYAK	General G. W. Getty	b

ALTERATIONS AND CORRECTIONS

COMMERCIAL LAND STATIONS

[Alterations and corrections to be made to the List of Radio Stations of the United States, edition of June 30, 1924, and to the International List of Radiotelegraph Stations, published by the Berne bureau]

BOSTON, MASS. (WBF).—W. l., strike out 300.
CHICAGOF, ALASKA.—System, composite, 1,000; w. l., *600*, 875; station operated and controlled by the Chicagof Development Co.
CLEARWATER, CALIF. (KNR).—W. l., 3,332, 3,780, 5,416.
CRANSTON, R. I.—Strike out all particulars.
HYDER, ALASKA.—System, K. & C., 1,000 and composite v. t. telegraph; w. l., *600*, 675, 1,600; hours, 8.45 a. m.–noon and 4–7 p. m.
LUDINGTON, MICH.—W. l., *600*, 715, 1,666.
MACKINAC ISLAND, MICH.—W. l., *600*, 640, 715, 1,578; rates, minimum 10 words, $1.
MINNEAPOLIS, MINN. (WLB).—Strike out all particulars.
MOBILE, ALA. (WNN).—Range, 150–300; system, Navy-R. C. A. 1,000 and W. S. A. Co., 1,000; w. l., *600*, 680, 1,713.
NEW BRUNSWICK, N. J. (WII).—W. l., 13,750.
NEW BRUNSWICK, N. J. (WIZ).—System, General Electric Co. v. t. telegraph.
NEW BRUNSWICK (Bound Brook-WRT).—W. l., 13,265.
NEW YORK (WCG).—Loc. O 74° 00′ 23″, N 40° 42′ 43″; system, I. W. T. Co. arc and Cutting & Washington spark, 1,000; w. l., *600*, 680, 706, 1,800, 2,250.
PALO ALTO, CALIF.—W. l., 3,074, 3,596, 4,360, 4,710, 5,805, 7,575.
PEARL CREEK DOME, COLD BAY OIL DISTRICT, ALASKA.—W. l., 650, 1,700.
RED BLUFF BAY, ALASKA.—System, Navy-W. S. A. Co., 1,000; w. l., *600*, 675; station operated and controlled by Baranof Packing Co.
ROCKY POINT, N. Y. (WQN).—System, General Electric Co. v. t. telegraph.
ROCKY POINT, N. Y. (WQO).—System, General Electric Co. v. t. telegraph.
ST. LOUIS, MO.—Loc. (approximately) O 90° 11′ 00″, N 38° 37′ 30″; range, 100; system, composite v. t. telegraph; w. l., *600*, 706, 850.
SHEBOYGAN, WIS.—W. l., *600*, 715, 1,764; hours, 7 a. m.–7 p. m. daily, 8–11 a. m. and 4–7 p. m. Sundays and holidays; rates, ship service, 10 cents per word.
TAMPA, FLA.—W. l., *600*, 690.

COMMERCIAL SHIP STATIONS, ALPHABETICALLY BY NAMES OF VESSELS

[Alterations and corrections to be made to the List of Radio Stations of the United States, edition of June 30, 1924, and to the International List of Radiotelegraph Stations, published by the Berne bureau]

A. A. AUGUSTUS.—W. l., *715*, 800, 875; rates, Great Lakes service, 4 cents per word; station operated and controlled by I. R. T. Co.
ABNER COBURN.—Station operated and controlled by owner of vessel.
ACE.—Station operated and controlled by owner of vessel.
AGWISTONE.—W. l., *600*, 706, 800.
ALAMEDA.—Station operated and controlled by U. R. Corp.
ALASKA.—Station operated and controlloed by U. R. Corp.
ALLENTOWN.—Name changed to J. W. Van Dyke; Atlantic Refining Co., owner of vessel.
ALPENA.—W. l., *715*, 1,585.
A. MACKENZIE.—W. l., *600*, 1,090.
AQUILO.—Range, 200; w. l., *600*, 706, 800.

BALLEW.—Range, 150; system, Navy-Simon, 1,000; w. l., *715*, 875; rates, Great Lakes service, 4 cents per word; station operated and controlled by I. R. T. Co.
BASFORD.—Name changed to W. B. Storey.
BELLHAVEN.—System, Navy–W. S. A. Co., 1,000; w. l., add 875; station operated and controlled by R. C. A.
BETHELRIDGE.—Name changed to Malacca; station operated and controlled by I. W. T. Co.
BETHLEHEM.—Range, 200; system, K. & C., 1,000; w. l., *715*, 800, 875; rates, Great Lakes service, 4 cents per word; station operated and controlled by owner of vessel.
BIRKENHEAD.—W. l., 450, *600*, 706, 800.
BOOBYALLA.—Station operated and controlled by U. R. Corp.
BOSTON (WEL).—W. l., *600*, 706, 1,250.
BOWDOIN.—System, strike out spark; w. l., *600*, 706, and variable amateur wave lengths; service, P.
BRISTOL.—Station operated and controlled by owner of vessel.
BROOKINGS.—Station operated and controlled by U. R. Corporation.
BUTTERFIELD.—Station operated and controlled by owner of vessel.
CADARETTA.—Station operated and controlled by U. R. Corp.
CALAMARES.—W. l., *600*, 706, 800.
CAMBRIA.—Range, 150; system, Wireless Improvement Co., 1,000; w. l., *715*, 800, 875; rates, Great Lakes service, 4 cents per word; station operated and controlled by owner of vessel.
CAMDEN (KDKL).—W. l., *600*, 706.
CAPE COD.—W. l., *600*, 706, 800.
CAROLYN.—W. l., *600*, 706, 800.
CATHERINE D.—Station operated and controlled by U. R. Corp.
CHATEAU THIERRY.—W. l., add 800.
CHESTER W. CHAPIN.—System, Lowenstein, 1,000; w. l., *600*, 706, 800, 875.
CHICAGO.—Station operated and controlled by owner of vessel.
CHILLICOTHE.—W. l., *600*, 706.
CHINCHA.—W. l., 450, 706, 800.
CITY OF BUFFALO.—Range, 200; system, Navy-Simon, 1,000; w. l., *715*, 800, 875; station operated and controlled by I. R. T. Co.
CITY OF ERIE.—Range, 200; system, Navy-Simon, 1,000; w. l., *715*, 800, 875; station operated and controlled by I. R. T. Co.
CITY OF HOUSTON.—W. l., *600*, 706, 800; station operated and controlled by owner of vessel.
COMMACK.—United States Shipping Board, owner of vessel.
COMMERCIAL COURIER.—System, R. C. A., v. t. telegraph; w. l., *600*, 706, 800.
COMUS.—W. l., *600*, 706, 800.
CONNEAUT.—W. l., *7 5*, 1,585.
COOS BAY.—Station operated and controlled by U. R. Corp.
CORDOVA (WAR).—Station operated and controlled by U. R. Corp.
CORSAIR.—W. l., 450, *600*, 706, 800; hours, X.
CUBA.—Name changed to Seneca; Wilmington Terminal Co., owner of vessel.
DAN C. KINGMAN.—W. l., *600*, 1,090.
DAUNTLESS.—Station operated and controlled by owner of vessel.
DILLWYN.—W. l., *600*, 706, 800.
DONNA LANE.—W. l., *600*, 706, 800.
E. C. POPE.—Station operated and controlled by owner of vessel.
EDGEMOOR.—W. l., *600*, 800, 952.
EL PASO.—W. l., *600*, 706.
ESPARTA.—W. l., *600*, 706, 800; hours, N.
EXCELSIOR.—Name changed to Muneastern.
FACILE.—W. l., 110, *600*.
F. A. DOUTY.—W. l., *600*, 706, 800.
F. A. WARNER.—Station operated and controlled by U. R. Corp.
FOREST KING.—Station operated and controlled by U. R. Corp.
FRANCIS E. POWELL.—W. l., *600*, 706, 800.
FRANK BILLINGS.—W. l., *715*, 800, 875; rates, Great Lakes service, 4 cents per word; station operated and controlled by I. R. T. Co.
FRED J. WOOD.—Station operated and controlled by owner of vessel.
G. E. ROPER.—Station operated and controlled by owner of vessel.
GRATIA.—Station operated and controlled by owner of vessel.
GREYLOCK.—Station operated and controlled by I. W. T. Co.
G. J. GRAMMER.—W. l., *715*, 800.
GUARDIAN.—W. l., *600*, 706.

GUINEVERE.—W. l., *600*, 706, 800, 1,800.
GYPSUM QUEEN.—Station operated and controlled by owner of vessel.
HALO.—W. l., *600*, 706, 1,500, 2,100, 2,400.
HAMPDEN.—Station operated and controlled by owner of vessel.
HAMPTON ROADS (KOJT).—Station operated and controlled by owner of vessel.
HANLEY.—Station operated and controlled by U. R. Corp.
HAROLD B. NYE.—Name changed to W. D. Calverley, jr., w. l., *715*, 800, 875; rates, Great Lakes service, 4 cents per word; station operated and controlled by I. R. T. Co.
HUGH KENNEDY.—Station operated and controlled by owner of vessel.
HURON (KVH).—W. l., *600*, 706, 800.
HURON (WCH).—W. l., *715*, 1,585.
H. W. BAXTER.—Station operated and controlled by owner of vessel.
ILLINOIS (KFMC).—System, Navy-R. C. A., 1,000; w. l., *600*, 706, 850; Inland Waterways Corporation owner of vessel; station operated and controlled by Goltra Barge Line.
IMLAY.—Station operated and controlled by owner of vessel.
IOWA.—System, Navy-Simon, 1,000; w. l., *600*, 706, 850; Inland Waterways Corporation owner of vessel; station operated and controlled by Goltra Barge Line.
IRIS.—Station operated and controlled by owner of vessel.
JACK.—Station operated and controlled by owner of vessel.
JACKSONVILLE.—W. l., *600*, 706, 800.
JAVA ARROW.—W. l., *600*, 706, 800.
JEFFERSON (WAJ).—Station operated and controlled by U. R. Corp.
J. H. SHEADLE.—Range, 150; system, Navy-Simon, 1,000; w. l., *715*, 800, 875; Cleveland Cliffs S. S. Co. owner of vessel.
J. M. DANZIGER.—W. l., *600*, 706, 800.
JOHN CUDAHY.—Range, 200; system, Navy-Lowenstein, 1,000; w. l., *600*, 706, 800; service, P; hours, X; station operated and controlled by owner of vessel.
JUNIATA (KQJ).—W. l., *600*, 706, 800, 875.
J. W. VAN DYKE.—Station operated and controlled by R. C. A.
KEARNEY.—Station operated and controlled by R. C. A.
KETCHIKAN.—Station operated and controlled by U. R. Corp.
KING.—Station operated and controlled by owner of vessel.
KIOWA.—Station operated and controlled by owner of vessel.
LACKAWANNA.—Range, 200; system, K. & C., 1,000; w. l., *715*, 800, 875; rates, Great Lakes service, 4 cents per word; station operated and controlled by owner of vessel.
LAKE FLORIAN.—Station operated and controlled by U. R. Corp.
LAKE FRANCES.—System, Navy-R. C. A., 1,000; w. l., *600*, 706, 800.
LAKE SLAVI.—Station operated and controlled by U. R. Corp.
LATOUCHE.—Station operated and controlled by U. R. Corp.
LEBANON.—Range, 200; system, K. & C., 1,000; w. l., *715*, 800, 875; rates, Great Lakes service, 4 cents per word; station operated and controlled by owner of vessel.
LEHIGH (WLN).—Range, 200; system, K. & C., 1,000; w. l., *715*, 800, 875; rates, Great Lakes service, 4 cents per word; station operated and controlled by owner of vessel.
LEROY.—Station operated and controlled by owner of vessel.
LIBERTY LAND.—Station operated and controlled by R. C. A.
LOS. ALAMOS.—W. l., *600*, 706, 800.
LUBRICO.—Station operated and controlled by U. R. Corp.
M. A. BRADLEY.—W. l., *715*, 800, 875.
MAINE.—Station operated and controlled by owner of vessel.
MARY E. MOORE.—Station operated and controlled by owner of vessel.
MARYLAND.—Range, 200; system, K. & C., 1,000; w. l., *715*, 800, 875; rates, Great Lakes service, 4 cents per word; station operated and controlled by owner of vessel.
MAZATLAN.—W. l., *600*, 706, 800.
MEIGS.—W. l., *600*, 800, 975, 1,200, 2,400.
MOUNT CARROLL.—Name changed to Maunawili; Matson Navigation Co. owner of vessel; station operated and controlled by owner of vessel.
MUNDELTA.—Range, 150; system, Cutting & Washington, 1,000; w. l., *600*, 706, 800; station operated and controlled by I. W. T. Co.
MURIEL.—Name changed to ZR-3.
NABESNA.—Station operated and controlled by U. R. Corp.

NARCISSUS.—System, Federal arc and Navy spark, 1,000; w. l., 450, *600*, 706, 800, 875; station operated and controlled by owner of vessel.
NEBRASKA.—Station operated and controlled by owner of vessel.
NIPSIC.—Station operated and controlled by owner of vessel.
NOMA.—Station operated and controlled by owner of vessel.
NORTHLAND (WGJ).—Station operated and controlled by U. R. Corp.
NORTHWESTERN.—Station operated and controlled by U. R. Corp.
NORWOOD.—Station operated and controlled by U. R. Corp.
NOURMAHAL.—System, R. C. A. v. t. telegraph; w. l., *600*, 706, 800, 1,800, 2,100, 2,400; station operated and controlled by owner of vessel.
ODUNA.—Station operated and controlled by U. R. Corp.
OREGONIAN.—Station operated and controlled by owner of vessel.
ORTEGA.—Station operated and controlled by owner of vessel.
OSAGE.—Station operated and controlled by owner of vessel.
OZARK.—Station operated and controlled by owner of vessel.
PANAMAN.—Station operated and controlled by owner of vessel.
PANAY (KEMJ).—Station operated and controlled by owner of vessel.
PENNANT.—Station operated and controlled by owner of vessel.
PLYMOUTH (KND).—W. l., 450, *600*, 706, 800.
POINT LOMA.—Station operated and controlled by owner of vessel.
PONCE.—W. l., *600*, 706, 800.
PRESIDENT ADAMS.—Station operated and controlled by owner of vessel.
PRESIDENT CLEVELAND.—W. l., *600*, 706, 800, 1,800, 2,400; Dollar Steamship Line owner of vessel; station operated and controlled by owner of vessel.
PRESIDENT LINCOLN.—System, Federal arc and Navy-Simon, 1,000; w. l., 450, *600*, 706, 2,100, 2,400; station operated and controlled by owner of vessel.
PRESIDENT PIERCE.—Dollar Steamship Line owner of vessel.
PRESIDENT MONROE.—Station operated and controlled by owner of vessel.
PRESIDENT PIERCE.—Station operated and controlled by owner of vessel.
PRESIDENT TAFT.—Dollar Steamship Line owner of vessel.
P. W. SHERMAN.—W. l., *715*, 800, 875; station operated and controlled by I. R. T. Co.
QUEEN (KESK).—Station operated and controlled by owner of vessel.
QUEEN (WGX).—W. l., *600*, 706, 800.
RAINIER.—Station operated and controlled by owner of vessel.
REDONDO.—System, Navy-Simon, 1,000; w. l., *600*, 706, 800; station operated and controlled by U. R. Corp.
RICHMOND (KDOQ).—Station operated and controlled by owner of vessel.
ROBIN ADAIR.—Station operated and controlled by I. W. T. Co.
ROSAMOND.—Range, 150; system, K. & C., 1,000; w. l., *600*, 706, 800; rates, 8 cents per word; station operated and controlled by I. W. T. Co.
ROYAL ARROW.—System, R. C. A. v. t. telegraph; w. l., 450, *600*, 706, 1,800, 2,100, 2,400; hours, X.
SAMUEL MITCHELL.—W. l., *715*, 1,585; service, P.
SANTA BARBARA.—Name changed to American; call signal changed to WKF; American-Hawaiian Steamship Co. owner of vessel.
SANTA MALTA.—Name changed to Hawaiian; call signal changed to WKU; American-Hawaiian Steamship Co. owner of vessel.
SANTA ROSA.—Name changed to Oregonian; call signal changed to WKO; American-Hawaiian Steamship Co. owner of vessel.
SAUCON (WBK).—W. l., 450, *600*, 706, 800, 875.
SAUCON (WLH).—Range, 150; system, composite, 1,000; w. l., *715*, 800, 875; rates, Great Lakes service, 4 cents per word; station operated and controlled by owner of vessel.
SEA LION.—Station operated and controlled by owner of vessel.
SEEANDBEE.—Range, 200; system, Navy-Simon, 1,000; w. l., *715*, 875.
SEWALLS POINT.—Station operated and controlled by owner of vessel.
SOUTHLANDS.—Station operated and controlled by U. R. Corp.
SPEEJACKS.—Station operated and controlled by owner of vessel.
STANDARD (KXOI).—Station operated and controlled by owner of vessel.
STANDARD II.—Station operated and controlled by owner of vessel.
STARR.—Station operated and controlled by U. R. Corp.
STEELTON.—Range, 200; system, K. & C., 1,000; w. l., *715*, 800, 875; rates, Great Lakes service, 4 cents per word; station operated and controlled by owner of vessel.
STEEL WORKER.—W. l., 450, *600*, 706, 800.
STEPHEN M. CLEMENT.—Range, 150; system, W. S. A. Co., 1,000; w. l., *600*, 706; rates, Great Lakes service, 4 cents per word; station operated and controlled by owner of vessel.

SUBDCO.—Submarine Boat Corp. owner of vessel.
SUFFOLK.—Station operated and controlled by owner of vessel.
SUNEWCO.—W. l., *600*, 706, 800.
SUNLITE.—Station operated and controlled by owner of vessel.
SUSQUEHANNA (WEM).—Station operated and controlled by owner of vessel.
SWIFTEAGLE.—Station operated and controlled by owner of vessel.
TANANA.—Station operated and controlled by U. R. Corp.
THEODORE H. WICKWIRE.—Station operated and controlled by owner of vessel.
THEODORE H. WICKWIRE, Jr.—Station operated and controlled by owner of vessel.
TRANSPORTATION.—Station operated and controlled by owner of vessel.
TRUJILLO.—Range, 300; system, R. C. A., 1,000; w. l., *600*, 706, 800.
TULSAGAS.—Station operated and controlled by owner of vessel.
UTOWANA.—Station operated and controlled by R. C. A.
VABA.—Station operated and controlled by owner of vessel.
VICTORIA.—Station operated and controlled by U. R. Corp.
VIRGINIAN.—W. l., *600*, 706, 800.
WEST CALERA.—W. l., *600*, 706, 800, 875.
WEST SEQUANA.—W. l., *600*, 706, 800, 875.
W. F. WHITE.—Station operated and controlled by owner of vessel.
WINONA COUNTY.—W. l., add 875; hours, X; station operated and controlled by I. W. T. Co.
W. L. STEED.—System, Navy-W. S. A. Co., 1,000; w. l., *600*, 706, 800.
WILLIAM C. ATWATER.—Range, 150; system, R. C. A., 1,000; w. l., *715*, 800, 875; rates, Great Lakes service, 4 cents per word; station operated and controlled by R. C. A.
WILLIAM G. MATHER.—Name changed to J. H. Sheadle.
WILLIAM N. PAGE.—Station operated and controlled by owner of vessel.
WYANDOTTE.—W. l., *715*, 1,585.
YOSEMITE (KDWE).—Station operated and controlled by U. R. Corp.
YUKON.—Station operated and controlled by U. R. Corp.
ZR-3.—Range, 150; system, Navy-Lowenstein, 1,000; w. l., *600*, 706, 800; rates, 8 cents per word; Columbia River Smoked Fish Co. owner of vessel; station operated and controlled by owner of vessel.
Strike out all particulars of the following-named vessels: American (old), Atlas, City of Taunton, Genesee, Hawaiian (old), Intrepid, Lake Fielding, New Orleans, Oregonian (old), Robert M. Thompson, Ruby, Somerset.

COMMERCIAL LAND AND SHIP STATIONS, ALPHABETICALLY BY CALL SIGNALS

KDLK, read *Seneca;* KDMO, *read* ZR-3; KDQT, *read* Maunawili; KDXS, *read* W. D. Calverley, jr.; KERT, *read* Malacca; KKO, *read* Muneastern; KOFR, *read* W. B. Storey; KVIU, *read* J. W. Van Dyke; strike out all particulars following the call signals, KDHI, KERP, KFLS, KIBN, KIDL, KNW, KOBC, KSU, KXL, WBJ, WBO, WKAP, WLB, WTT.

BROADCASTING STATIONS, BY CALL SIGNALS

[Alterations and corrections to be made to the List of Radio Stations of the United States, edition of June 30, 1924]

KDYL (Salt Lake City, Utah).—Power, 50; w. l., 246; fy. kc., 1,220.
KFAU (Boise, Idaho).—W. l., 278; fy. kc., 1,080.
KFDD (Boise, Idaho).—Power, 50; w. l., 278; fy. kc., 1,080.
KFEQ (Oak, Nebr.).—Power, 500.
KFIO (Spokane, Wash.).—Power, 100.
KFIZ (Fondulac, Wis.).—Station operated and controlled by Daily Commonwealth and Wisconsin Radio Sales (Inc.), 22 Forest Ave.
KFMT (Minneapolis, Minn.).—Call signal changed to WHAT; power, 500.
KFMW (Houghton, Mich.).—W. l., 263; fy. kc., 1,140.
KFNV (Santa Rosa, Calif.).—Power, 50; w. l., 229; fy. kc., 1,310.
KFOR (David City, Nebr.).—Power, 100.
KFPW (Carterville, Mo.).—Station operated and controlled by St. Johns M. E. Church, South; w. l., 258; fy. kc., 1,160.
KFQZ (Hollywood, Calif.).—Station operated and controlled by Taft Products Co.
KFRX (Pullman, Wash.).—W. l., 217.3; fy. kc., 1,380.

KFUM (Colorado Springs, Colo.).—Station operated and controlled by W. D. Pyle.
KLDS (Independence, Mo.).—Power, 1,000; w. l., 440.9; fy. kc., 680.
WABX (Mount Clemens, Mich., near).—Power, 150.
WAFD (Port Huron, Mich.).—Power, 500.
WBAO (Decatur, Ill.).—W. l., 270; fy. kc., 1,110.
WBAX (Wilkes-Barre, Pa.).—Power, 100.
WBBM (Chicago, Ill.).—Power, 1,500; address, 1554 Howard Street.
WBBP (Petoskey, Mich.).—Power, 200.
WCBD (Zion, Ill.).—Power, 5,000.
WCBQ (Nashville, Tenn.).—Power, 100.
WCCO (St. Paul-Minneapolis, Minn.).—Power, 5,000.
WCK (St. Louis, Mo.).—Call signal changed to WSBF; station operated and controlled by Stix, Baer & Fuller.
WEAF (New York, N. Y.).—Power, 3,000.
WEAH (Wichita, Kans.).—Station operated and controlled by Hotel Lassen (Rigby-Gray Hotel Co.).
WEBC (Superior, Wis.).—Power, 100.
WEBZ (Savannah, Ga.).—W. l., 263; fy. kc., 1,140.
WENR (Chicago, Ill.).—Power, 100.
WFBE (Seymour, Ind.).—Station operated and controlled by Van De Walle Music & Radio Co.
WFBH (New York, N. Y.).—Power, 500.
WFBI (Camden, N. J.).—Power, 250.
WFKB (Chicago, Ill.).—Power, 200.
WGBF (Evansville, Ind.).—Power, 100.
WHAD (Milwaukee, Wis.).—Station operated and controlled by Marquette University and the Milwaukee Journal.
WHBL (Logansport, Ind.).—W. l., 215.7; fy. kc., 1390.
WHBN (St. Petersburg, Fla.).—W. l., 238; fy. kc., 1260.
WHBQ (Memphis, Tenn.).—Power, 50.
WHBU (Anderson, Ind.).—Station operated and controlled by Riviera Theatre and Bing's Clothing.
WJAM (Cedar Rapids, Iowa).—Power, 100.
WLB (Minneapolis, Minn.).—Power, 500.
WMAZ (Macon, Ga.).—Power, 500.
WOC (Davenport, Iowa).—Power, 5,000.
WODA (Paterson, N. J.).—W. l., 224; fy., kc. 1,340.
WSAN (Allentown, Pa.).—Power, 100.
WSKC (Bay City, Mich.).—Power, 100.
WTAM (Cleveland, Ohio).—Power, 2,500.
WTAS (Elgin, Ill.—near).—Power, 1,500.
Strike out all particulars of the following-named stations: KFBU (Laramie, Wyo.); KFCC (Helena, Mont.); KFKB (Milford, Kans.); KFLB (Menominee, Mich.); KFMB (Little Rock, Ark.); KFNJ (Warrensburg, Mo.); KFNL (Paso Robles, Calif.); KFNY (Helena, Mont.); KFRQ (Portland, Oreg.); KFWC (Upland, Calif.); WBBZ (Indianapolis, Ind.); WCBI (Bemis, Tenn.); WCBJ (Jennings, La.); WDBP (Superior, Wis.); WDBW (Columbia, Tenn.); WDM (Washington, D. C.); WFBB (Eureka, Ill.); WHBI (Chesaming, Mich.); WHBT Downers Grove, Ill.); WSAB (Cape Girardeau, Mo.); WSAD (Providence, R. I.); WSAX (Chicago, Ill.); WTAU (Tecumseh, Nebr.).

GOVERNMENT LAND STATIONS, ALPHABETICALLY BY NAMES OF STATIONS

[Alterations and corrections to be made to the List of Radio Stations of the United States, edition of June 30, 1924, and to the International List of Radiotelegraph Stations, published by the Berne bureau]

BETHEL, ALASKA.—W. l., 480, *600*.
BOLLING FIELD, D. C.—W. l., 1,499.
BOSTON, MASS. (WVO).—W. l., 1,414.
CAMP ALFRED VAIL, N. J.—W. l., 1,090, 1,499.
CAMP HARRY J. JONES.—W. l., 1,351.
CAMP KNOX, KY.—W. l., 1,090.
CAMP MARFA, TEX.—W. l., 3,844.
CAMP NICHOLS, P. I.—W. l., 450.
CAMP S. D. LITTLE, ARIZ.—Read Camp Stephen D. Little, Ariz.; w. l., 1,351.
CAMP STOTSENBURG, P. I.—W. l., 1,600.
CHANUTE FIELD, Ill.—W. l., 1,499, 1,532.

CHICAGO, ILL. (WVT).—W. l., add 4,680.
CIRCLE, ALASKA.—W. l., 3,998.
CLARK FIELD, P. I.—W. l., 450.
CRAIG, ALASKA.—W. l., 485, *600*.
FAIRBANKS, ALASKA.—W. l., 3,702.
FAIRFIELD, OHIO.—W. l., 1,499, 1,570.
FORT ADAMS, R. I.—W. l., 1,414.
FORT ANDREWS, MASS.—W. l., 1,090.
FORT BENJAMIN HARRISON, IND.—W. l., 1,570.
FORT BLISS, TEX.—W. l., 7,668.
FORT BRAGG, N. C.—W. l., 2,802.
FORT BROWN, TEX.—W. l., 3,095.
FORT D. A. RUSSELL, WYO.—W. l., 1,561.
FORT DES MOINES, IOWA.—W. l., 674.
FORT DOUGLAS, UTAH.—W. l., 1,558, 2,776.
FORT EGBERT, ALASKA.—W. l., *600*, 700.
FORT FRANK, P. I.—W. l., 1,102.
FORT GIBBON, ALASKA.—W. l., 380.
FORT HANCOCK, N. J.—W. l., 1,090.
FORT HAYES, OHIO.—W. l., 1,414.
FORT H. G. WRIGHT, N. Y.—W. l., 1,414.
FORT HOWARD, MD.—W. l., 1,561.
FORT HUACHUCA, ARIZ.—W. l., 1,321.
FORT JOHN HAY, P. I.—W. l., 1,600.
FORT LEAVENWORTH, KANS.—W. l., add 1,381.
FORT MCARTHUR, CALIF.—W. l., 1,321.
FORT MCPHERSON, GA.—W. l., 2,883.
FORT MILLS, P. I. (WUAG).—W. l., 1,102.
FORT MILLS, P. I. (WWP).—W. l., 1,600.
FORT NIAGARA, N. Y.—W. l., 1,090.
FORT OMAHA, NEBR.—W. l., 1,874.
FORT PORTER, N. Y.—W. l., 1,199.
FORT RILEY, KANS.—W. l., 674.
FORT RINGGOLD, TEX.—W. l., 1,351.
FORT ST. MICHAEL, ALASKA.—W. l., 365, *600*.
FORT SAM HOUSTON, TEX.—W. l., 1,090, 3,091, 5,797.
FORT SNELLING, MINN.—W. l., 1,463.
FORT TILDEN, N. Y.—W. l., 1,090.
FORT TOTTEN, N. Y.—W. l., 1,090.
FORTUNA, ALASKA.—W. l., 320.
FORT WILLIAMS, ME.—W. l., 1,414.
FORT WINFIELD SCOTT, CALIF.—W. l., 1,090.
FORT WINT, P. I.—W. l., 1,102.
FORT YUKON, ALASKA.—W. l., 441.
FRANCE FIELD, CANAL ZONE.—W. l., 1,499.
GOVERNORS ISLAND, N. Y.—W. l., 1,090, 1,344.
HOLY CROSS, ALASKA.—W. l., 470.
HOT SPRINGS, ALASKA.—W. l., 305, service, FX.
IDITAROD, ALASKA.—W. l., 700, 3,458.
JUNEAU, ALASKA.—W. l., 2,254; service, FX; hours, X.
KELLY FIELD, TEX.—W. l., 1,499.
KETCHIKAN, ALASKA.—W. l., 1,874, 4,543; service, FX.
KINDLEY FIELD, P. I.—W. l., 450.
KOTZEBUE, ALASKA.—W. l., 435; service, FX; hours, X.
LANGIN FIELD, W. VA.—W. l., 1,499.
LANGLEY FIELD, VA.—W. l., 1,090, 1,499.
LIVENGOOD, ALASKA.—W. l., 480.
LUKE FIELD, HAWAII.—W. l., 1,499.
MANILA, P. I.—W. l., 1,600.
MAXWELL, ALA.—Read Maxwell Field, Ala.; w. l., 1,499.
METUCHEN, N. J.—W. l., 1,090.
MITCHELL FIELD, N. Y.—W. l., 1,499.
NOME, ALASKA.—W. l., *600*, 660, 900, 3,613, 3,998.
ROCKWELL FIELD, CALIF.—W. l., 1,363, 1,499; hours, X.
RUBY, ALASKA.—W. l., 400; service, FX.
SAN FRANCISCO, CALIF. (WVY).—W. l., 1,874.
SCOTT FIELD, ILL.—W. l., 952, 1,499.
SELFRIDGE FIELD, MICH.—W. l., 1,090, 1,499.

TACOTNA, ALASKA.—W. l., 365; service, FX.
VALDEZ, ALASKA.—W. l., 1,102; service, FX.
WASHINGTON, D. C. (WVA).—W. l., 1,333, 2,998.
WEST POINT, N. Y.—W. l., 1,090.
WISEMAN, ALASKA.—W. l., 550.

GOVERNMENT SHIP STATIONS, ALPHABETICALLY BY NAMES OF STATIONS

[Alterations and corrections to be made to the List of Radio Stations of the United States, edition of June 30, 1924, and to the International List of Radiotelegraph Stations, published by the Berne bureau]

CAMBRIA.—W. l., *600*, 900, 975, 1,200, 2,400.
DELLWOOD.—W. l., strike out 300.
GENERAL ABSALOM BAIRD.—W. l., 952.
GRANT.—W. l., add 800.
HENRY FLAD.—W. l., 700.
MISSISSIPPI (WYCT).—W. l., strike out 600.
ST. MIHIEL.—W. l., add 800.
SOMME.—W. l., *600*, 800, 975, 1,200, 2,400.
THOMAS (WXM).—W. l., *600*, 800, 975, 1,200, 2,400.
WM. T. ROSSELL.—W. l., add 1,090.
W. L. MARSHALL.—W. l., *600*, 1,090.

GOVERNMENT LAND AND SHIP STATIONS, ALPHABETICALLY BY CALL SIGNALS

WYK, *read* Maxwell Field, Ala; WZL, *read* Camp Stephen D. Little, Ariz.

SPECIAL LAND STATIONS, BY NAMES OF STATIONS

[Alterations and corrections to be made to the List of Radio Stations of the United States, edition of June 30, 1924]

Strike out all particulars of the following-named stations: Anchorage, Alaska (7XX); Anchorage, Alaska (portable–7XY); Atlantic, Mass. (1XAR); Austin, Tex. (5XX); Baltimore, Md. (3YH); Belfast, Me. (1XAP); Butte, Mont. (7XBA); Butte, Mont. (7XBB); Cape Girardeau, Mo. (9XBO); Cincinnati, Ohio (8XBV); Cloudcroft, N. Mex. (5XAZ); Conway, Ark. (5XAC); Dallas, Tex. (5XAY); Dallas, Tex. (5XBH); Dartmouth, Mass. (portable–1XAN); Dartmouth, Mass. (1XV); Dublin, Tex. (5XAJ); El Paso, Tex. (5XAS); Enid, Okla. (5XBD); Fort Worth, Tex. (5XAP); Galveston, Tex. (5XAX); Jacksonville, Fla. (4XI); Kelseyville, Calif. (portable–6XBV); Kukak Bay, Alaska (7XAE); Laccy, Wash. (7YS); Lenox, Mass. (1XAS); Little Rock, Ark. (portable–5XAR); Los Angeles, Calif. (6XAQ); Los Angeles, Calif. (6XAT); Medford, Mass. (1XAW); Medford, Oreg. (7XAC); New Braunfels, Tex. (5XAV); New Orleans, La. (5YR); Newton Centre, Mass. (1XAU); New York, N. Y. (2XH); New York, N. Y. (2XNB); New York, N. Y. (2XU); North Little Rock, Ark (5XAB); Oklahoma, Okla. (5XAW); Oklahoma, Okla. (5XG); Oklahoma, Okla. (5XT); Port Arthur, Tex. (5XV); Portland, Oreg. (7XAH); Providence, R. I. (1YE); Salt Lake City, Utah (6XAF); Salt Lake City, Utah (portable–6XBE); San Antonio, Tex. (5XAQ); San Diego, Calif. (6XBI); Sand Springs, Okla. (5XBF); San Francisco, Calif. (6XAE); San Francisco, Calif. (6XBB); Seattle, Wash. (7XC); University, Miss. (5YE); Villanova, Pa. (3XAU); Villanova, Pa. (3YP); Washington, D. C. (3XAV); Washington, D. C. (3XL); Waterbury, Conn. (1XAJ); Wilkinsburg, Pa. (8XX); Yakima, Wash. (7XAJ).

MISCELLANEOUS

NEW INTERNATIONAL LIST OF RADIOTELEGRAPH STATIONS

A new edition of the "International List of Radiotelegraph Stations," published by the International Bureau of the Telegraphic Union, Radiotelegraphic Service, Berne, Switzerland, is on the press and will be ready for distribution by that bureau within a short time. This publication does not contain any data on broadcasting stations but is essentially for the use of commercial land stations handling traffic with ship stations, and for the use of ship stations, although information of land stations which communicate with other land stations is given in the list. The price of this publication, including all supplements up to July, 1926, is 13 francs, Swiss (gold). Subscriptions should be forwarded direct to the Berne bureau.

USE OF 300 AND 450 METERS WITHIN RANGE OF GERMAN COAST STATIONS

The German Government requests that ship stations no longer use the 450-meter wave length when within range of German coast stations and to not use the 300-meter wave length when within the same German territories unless its use is rendered absolutely necessary in case of distress.

CAPE GUARDAFUI, ITALIAN SOMALILAND COMPASS STATION OPEN

This station, which has been assigned call signal ISK, is located in 51° 13′ 30″ E., 11° 44′ 10″ N. Its normal range is 150 miles; wave length, 600 meters, although it can operate on variable wave lengths between 600 and 3,000 meters; hours of operation are continuous. The station interrupts its watch during the first five minutes of each hour. During the first two minutes of this interruption it emits its call signal several times as a radio beacon. A charge of 6 francs for each bearing is made to foreign ships.

MORUP, SWEDEN, COMPASS STATION OPEN

This station, which has been assigned call signal SAN, is located near Falkenberg in 12° 21′ 30″ E., 56° 55′ 58″ N., and operates on 600 meters. It is controlled by the Goteborg station, which keeps watch on 600 meters.

RATES FOR ITALIAN STATIONS

Inland telegraph rates, applicable to radiograms, intended for Italy and handled by Italian coast stations are 25 centimes per word, minimum 2 francs, for ordinary radiograms and 75 centimes per word, minimum 6 francs, for urgent radiograms. This is an alteration of the rates published in the May (No. 97) edition of this publication.

ANNAPOLIS NAVAL STATION TRANSMITTING SPECIAL TIME SIGNAL

A special time signal will be transmitted by this station on 4,193 meters, daily, from 0255 to 3000, seventy-fifth meridian time. This transmission started May 15, this year, and will end September 30, this year.

STUDY OF RADIO-FREQUENCY INDUCTANCE COILS

During the past year the Bureau of Standards has carried on an investigation of the radio-frequency resistance and other properties of various types of coils suitable for use in radio receiving sets at broadcast frequencies. Typical coils were constructed at the bureau and were adjusted to have the same inductance at a low frequency (1 kilocycle). Measurements were made of the resistance and inductance at frequencies covering the broadcast band (500 to 1,500 kilocycles). The coils included several types made up of solid and litz wire, single and multiple-layer coils of several types of winding, single-layer coils of various sizes of wire, and single-layer coils covered with different kinds of insulating binder. The voluminous results obtained have been summarized by means of curves. A paper reporting these measurements has been prepared. When it is issued, it will be announced in the Radio Service Bulletin.

In order to improve the sharpness of resonance of some of the bureau's standard frequency meters (wave meters), especially at frequencies above 1,000 kilocycles, a study is being made of the radio-frequency resistance of inductance coils used for this purpose. Coils have been made of various types of conductors, including solid copper wire, copper tubing, and litz wire of various sizes, and resistance measurements made at varying frequencies. It appears from the preliminary results that in the design of a standard frequency meter no single size or type of wire is suitable for all inductors, but that in order to obtain the best results different kinds of wire must be used on the coils for different frequency ranges.

PIEZOELECTRIC OSCILLATORS

The research on the uses of piezoelectric oscillators as radio standards, concerning which a preliminary statement appeared in the October (1924) Radio Service Bulletin and which has been in progress for over a year, has led to a number of useful applications. The piezoelectric oscillator has been found to be exceptionally valuable as a portable frequency standard. It has been used along with several other methods for making the frequency standard of the bureau available at distant places and has been found to be the best of such

methods, primarily because the frequency is a function of the dimensions of a quartz plate which can not change in shipment. The bureau has designed a piezoelectric oscillator equipment of small cost suitable for use by radio stations, scientific laboratories, and others as a frequency standard which can be used for checking the ordinary frequency meters (wave meters). By making use of harmonics a single quartz plate gives a sufficient number of points for a complete frequency meter calibration. Equipments made according to this design are under construction for use by the supervisors of radio. These outfits are also being used to make comparisons with the frequency standards at Washington of those used at Stanford University, California, for measuring the frequencies at the times of the standard frequency transmissions. Arrangements have also been made to carry on a comparison of the frequency standards of the United States with those of European countries by means of these piezo oscillators. The use of these outfits, particularly in connection with the high-frequency wave meters which also were designed by the Bureau of Standards, and which are now being constructed for the radio supervisors, should help materially in maintaining the constancy of radio station frequencies in the future. This desirable condition is being facilitated by the use in many radio broadcasting stations of frequency indicators of a type designed by the bureau. A number of other applications of piezoelectric oscillators have been discovered, and a paper describing the results of the work is in preparation. When it is issued it will be announced in the Radio Service Bulletin.

STANDARD FREQUENCY STATIONS

As a result of measurements by the Bureau of Standards upon the transmitted waves of a limited number of radio transmitting stations, data are given in each month's Radio Service Bulletin on such of these stations as have been found to maintain a sufficiently constant frequency to be useful as frequency standards. There may be many other stations maintaining their frequency just as constant as these, but these are the only ones among those observed. There is of course no actual guaranty that the stations named below will maintain the constancy shown, but the data indicate the high degree of confidence that can be placed in them. The transmitted frequencies from these stations can be utilized for standardizing frequency meters (wave meters) and other apparatus by the procedure given in Bureau of Standards Letter Circular No. 92, Radio Signals of Standard Frequency and Their Utilization. A copy of that letter circular can be obtained by a person having actual use for it upon application to the Bureau of Standards, Department of Commerce, Washington, D. C.

Station	Owner	Location	Assigned frequency (kilocycles)	Period covered by measurements (months)	Number of times measured	Deviations from assigned frequency	
						Average	Greatest since May 20, 1925
						Per cent	*Per cent*
WQL	Radio Corporation of America.	Coram Hill, Long Island, N. Y.	17.13	6	41	0.1	0.4
NSS	U. S. Navy	Annapolis, Md.	17.59	22	176	.1	.2
WCI	Radio Corporation of America.	Barnegat, N. J.	17.95	4	21	.2	.1
WGG	Do	Tuckerton, No. 1, N. J.	18.86	22	175	.1	.2
WII	Do	New Brunswick, N. J.	21.80	2	18	.1	.1
WRT	Do	....do	22.60	2	13	.1	.2
WVA	U. S. Army	Annapolis, Md.	100	2	46	.1	.2
WEAF	American Telephone & Telegraph Co.	New York, N. Y.	610	6	58	.0	.0
WCAP	Chesapeake & Potomac Telephone Co.	Washington, D. C.	640	20	94	.1	.2
WRC	Radio Corporation of America.	....do	640	18	82	.1	.2
WSB	Atlanta Journal	Atlanta, Ga.	700	21	88	.1	.3
WGY	General Electric Co.	Schenectady, N. Y.	790	24	128	.1	.0
WBZ	Westinghouse Electric & Manufacturing Co.	Springfield, Mass.	900	14	43	.1	.2
KDKA	....Do	East Pittsburgh, Pa.	970	21	165	.1	.1

STANDARD RADIO FREQUENCY TRANSMISSIONS, JULY TO OCTOBER, 1925

The Bureau of Standards transmits, twice a month, radio signals of definitely announced frequencies, for use by the public in standardizing wave meters and transmitting and receiving apparatus. The signals are transmitted from the bureau's station (WWV), Washington, D. C., and from station 6XBM, Stanford University, California.

The transmissions are by unmodulated continuous-wave radio telegraphy. A complete frequency transmission includes a "general call," a "standard frequency signal," and "announcements." The "general call" is given at the beginning of the 8-minute period and continues for about 2 minutes. This includes a statement of the frequency. The "standard frequency signal" is a series of very long dashes with the call letters (WWV or 6XBM) intervening. This signal continues for about 4 minutes. The "announcements" are on the same frequency as the "standard frequency signal" just transmitted and contain a statement of the frequency. An announcement of the next frequency to be transmitted is then given. There is then a 4-minute internal while the transmitting set is adjusted for the next frequency.

The signals can be heard and utilized by stations equipped for continuous-wave reception at distances within about 500 to 1,000 miles from the transmitting stations. Information on how to receive and utilize the signals is given in Bureau of Standards Letter Circular No. 92, which may be obtained on application from the Bureau of Standards, Washington, D. C. Even though only a few points are received, persons can obtain as complete a wave meter calibration as desired by the method of generator harmonics. Information on that method will be supplied by the bureau on request.

The schedule of standard frequency signals from both the Bureau of Standards and Stanford University is as follows:

Schedule of frequencies in kilocycles

[Approximate wave lengths in meters in parentheses]

Time [1]	July 20	Aug. 20	Sept. 5	Sept. 21	Oct. 5	Oct. 20
10.00 to 10.08 p. m.	1,500 (200)	3,000 (100)	125 (2,400)	300 (1,000)	550 (545)	1,500 (200)
10.12 to 10.20 p. m.	1,650 (182)	3,300 (91)	133 (2,254)	315 (952)	630 (476)	1,650 (182)
10.24 to 10.32 p. m.	1,500 (167)	3,000 (83)	143 (2,097)	345 (869)	730 (411)	1,800 (167)
10.36 to 10.44 p. m.	2,000 (150)	4,000 (75)	155 (1,934)	375 (800)	850 (353)	2,000 (150)
10.48 to 10.56 p. m.	2,200 (136)	4,400 (68)	166.5 (1,800)	425 (705)	980 (306)	2,200 (136)
11.00 to 11.08 p. m.	2,450 (122)	4,900 (61)	205 (1,463)	500 (600)	1,130 (265)	2,450 (122)
11.12 to 11.20 p. m.	2,700 (111)	5,400 (55)	260 (1,153)	600 (500)	1,300 (231)	2,700 (111)
11.24 to 11.32 p. m.	3,000 (100)	6,000 (50)	315 (952)	666 (450)	1,500 (200)	3,000 (100)

[1] Eastern standard time for WWV, Washington, D. C. Pacific standard time for 6XBM, California.

REFERENCES TO CURRENT RADIO PERIODICAL LITERATURE

This is a monthly list of references prepared by the Radio Laboratory of the Bureau of Standards and is intended to cover the more important papers of interest to the professional radio engineer which have recently appeared in technical periodicals. The number at the left of each reference classifies the reference by subject, in accordance with the scheme presented in A Decimal Classification of Radio Subjects—An Extension of the Dewey System, Circular No. 138, a copy of which may be obtained for 10 cents from the Superintendent of Documents, Government Printing Office, Washington, D. C. Further information about these lists, availability of previous lists, and of the several periodicals is contained in the extended statement preceding the early lists and published in the Radio Service Bulletin prior to April, 1923, and also in May and September, 1923.

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